CLAIMS:

1. A device for navigating an instrument (4) in a body volume that is subject to a spontaneous movement that can be described by a movement parameter (E), comprising

a) a locating device (2) for determining the location ($\underline{r}$) of the instrument (4);

b) a sensor device (5) for determining the movement parameter (E);

c) a data processing device (10) coupled to the locating device (2) and the sensor device (5) and comprising a movement model (11) that describes the movement of the body volume as a function of the movement parameter (E), wherein the data processing device (10) is designed to correlate an estimated location ($\underline{r} + \underline{\Delta}$) of the instrument in a reference phase (E_0) of the spontaneous movement with measured values of the location ($\underline{r}$) of the instrument (4) and of the associated movement parameter (E) with the aid of the movement model (11).

2. A device as claimed in claim 1, characterized in that the data processing device (10) is designed to reconstruct the movement model (11) from measured values for the location of the interpolation nodes and for the associated movement parameters (E).

3. A device as claimed in claim 2, characterized in that the data processing device (10) is designed to supplement the measured movement of the interpolation nodes in the movement model (11) by interpolation.

4. A device as claimed in claim 2, characterized in that the data processing device is designed to determine, in particular from X-ray, CT or MRI recordings, measured values for the location of interpolation nodes from a series of three-dimensional images of the body volume.

5. A device as claimed in claim 2, characterized in that the measured values for the location of the interpolation nodes of the body volume correspond to locations ($\underline{r}$), measured with the locating device (2), of the instrument (4).

6. A device as claimed in claim 5, characterized in that the measured locations ($\underline{r}$) of the instrument (4) have been obtained without moving the instrument (4) relative to the body volume.

7. A device as claimed in claim 1, characterized in that the data processing device (10) comprises a memory containing a static image (12) of the body volume and is designed to determine the location ($\underline{r} + \underline{\Delta}$), estimated for the reference phase (E_0), of the instrument (4) in the static image.

8. A device as claimed in claim 1, characterized in that the sensor device comprises an ECG apparatus (5) and/or an apparatus for determining the respiration phase.

9. A device as claimed in claim 1, characterized in that the locating device (2) is designed to determine the location of the instrument (4) with the aid of magnetic fields and/or with the aid of optical methods.

10. A method of navigating an instrument (4) in a body volume that is subject to a spontaneous movement that can be described by a movement parameter (E) comprising the following steps:

a) measurement of the location of interpolation nodes of the body volume and of the associated movement parameters (E) in different phases of the spontaneous movement;

b) reconstruction of a movement model (11) for the body volume from said measured values;

c) measurement of the location ($\underline{r}$) of the instrument (4) and of the associated movement parameter (E);

d) calculation of the estimated position ($\underline{r} + \underline{\Delta}$) of the instrument (4) in a reference phase (E_0) of the spontaneous movement with the aid of the movement model (11).